

15 March 2007

Mr. Gary Flamm
Lighting Program lead
California Energy Commission
1516 Ninth Street, Mail Stop 25
Sacramento, CA 95814
Tel. 916.654.2817
gflamm@energy.state.ca.us

Dear Mr. Flamm:

This letter is to address our concern about the manner in which the State of California is planning to mandate lighting energy savings.

My firm, KAPLAN GEHRING McCARROLL ARCHITECTURAL LIGHTING, is one of the largest architectural lighting design firms in the U.S. For all of our projects, domestic and overseas, we strive to save energy. We recognize the magnitude of lighting energy currently used in buildings, and its resultant impact on global warming and environmental sustainability.

We agree with the State's goal of reducing energy used for lighting, but not the method of implementation. Here are some of my GLOBAL comments:

- 1) Energy is consumed as a function of time. Title 24's limitation on lighting power density (LPD), with no regard to time, is the same as limiting automobile engines to maximum speed.
- 2) To repeatedly crank down on LPD for projects being constructed or renovated will result in an unfair burden on them. A new project with 1.0 watts/SF could be next to an older project that consumes 4.0 watts/SF.
- 3) There could be major impacts on the California economy. For instance, national chains are already balking at Title 24 standards for their national roll-out efforts.
- 4) As energy costs rise, people increase their efforts to save. The marketplace should be a willing participant with the government to obtain further energy savings.
- 5) Any time the government interferes with the market, such as forcing phase-outs of incandescent lamps, there will be imbalance and conflict.
- 6) Rather than limiting the maximum amount of energy that can be used at any one point in time (which Title 24 has been doing), there should be increased incentives for saving energy, and increased penalties for wasting it.
- 7) Other industries have a credit trading market to even things out. There is precedent for selling electricity back to the grid, for instance.
- 8) Gasoline is heavily taxed to promote the public good, so can electricity.
- 9) The government prefers homeownership as a stabilizing force in the community, so they give a mortgage interest tax deduction. A similar system can be used for saving energy.

As lighting consultants, it is our challenge to balance a number of constraints as we create optimal lighting designs, such as energy, first cost, life cycle cost, contrast, accent vs. ambient light, balance, lamp life, maintenance, and of course, aesthetics. It is essential that each space evokes positive feelings and a "sense of place". In using Title 24 and IECC on a daily basis over the years, we have learned a number of things "in the trenches":

- 1) One example of Title 24 already being too restrictive is hotel and multifamily corridors at 0.6 watts/SF. It is almost impossible to have sufficiently uniform light. Assault in hotel corridors have occurred, and hotel owners are concerned about this increasing risk.
- 2) 20-watt metal halide fixtures seem to be a panacea for many people. However, these fixtures still have ballast problems and are not ready for mass release on the market. It is premature and irresponsible to mandate their use. Also, these fixtures are not dimmable, and their restrike time makes them unsuitable for emergency lighting. Not enough low-wattage metal halide fixtures are manufactured to get their cost manageable. This makes their payback time prohibitively long, which is a burden for the owner.
- 3) Compact fluorescent wallwashers are appropriate in an office environment, but not in higher-end retail. Most of the lighting energy is expended uniformly at the top of the perimeter wall, with less at the merchandise.
- 4) A successful retail experience demands controlled contrast that can only be provided with directional fixtures, not fluorescent.
- 5) Restaurants require maximum scene control and dimming throughout the day and evening. Limiting the maximum wattage gives no credit to the time that each group of fixtures is dimmed down. Even the Title 24 dimming credit is minor compared to the actual savings in wattage.
- 6) The new outdoor lighting calculations that are being considered are far too onerous and complex. Owners will never agree to pay us for the time these calculations will require. If the new regulations are passed, we are considering the elimination of outdoor lighting projects from our business.
- 7) Title 24 rules are becoming so constraining and specific that they are limiting our choices as designers beyond formulaic. New projects in California will be depressing places to be.

To summarize, the State and utilities can use taxation, penalties, and incentives to promote the goal of energy savings. To interfere with the market by mandating compact fluorescent lamps (which have low-end dimming, size, appearance, and disposal issues), or by limiting maximum allowable wattage without a function of usage over time is a mistake. We all pay for our energy by kilowatt hours, let's be able to use it that way.

Sincerely,

KAPLAN GEHRING McCARROLL ARCHITECTURAL LIGHTING, INC.



G. Michael Gehring, AIA, LC, IALD, LEED AP
Principal / CFO

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